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Reply to Notice of Non-Compliant Amendment 5/24/11

PF040025

Customer No. 24498

**REMARKS**

Claims 1-5 and 8-9 are pending in the Application after entry of this amendment. Claims 1-5 and 8-9 have been rejected by Examiner. Claim 1 has been amended. No new matter has been added.

**Information Disclosure Statement**

The Examiner has requested that the references cited in the Specification be listed on a separate Information Disclosure Statement. An Information Disclosure Statement is provided herewith.

**Claim Rejections Pursuant to 35 U.S.C. §103**

Claims 1-5 and 8-9 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Chen et al (US2004/0041768) in view of well known art. Applicants respectfully disagree for at least the following reasons.

Claim 1 has been amended by adding that a single second storage capacitor is connected to at least two mirror electrodes via at least two fourth switches as to better point out the subject-matter of applicants' invention.

As described on page 3, lines 25-31, an object of the invention is to propose a new architecture of a valve for reducing its dimensions and decreasing its manufacturing cost. Such an object is achieved by applicants' invention as claimed in amended claim 1 by reducing the number of transistors and of capacitors of the drive circuit in comparison to the state of the art, some transistors and capacitors being shared between several liquid crystals. Indeed, as claimed in claim 1 and as illustrated in figures 5 and 7, a single transistor T3 and a single capacitor CS2 are used for each group of at least two elements of the valve. By contrast, in the state of the art (see figures 1, 3 and 4 of applicants' Specification), which includes Chen, each element of a valve comprises one transistor T3 and one capacitor CS2. In an architecture according

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to applicants' invention, in which the elements of the valve are grouped together in groups of at least 2 elements, it is possible to dispense with at least one transistor and at least one capacitor for each group of at least 2 elements of the valve (i.e. 1 transistor and 1 capacitor for each group of 2 element (see applicants' specification on page 9, lines 24-29) and 3 transistors and 3 capacitors for each group of 4 elements (see applicants' specification on page 11, lines 1-4)). The grouping of several elements of a valve is possible by using a special coding of the video information and a special addressing of the coded video information in the valve, as explained in applicants' specification on page 6, lines 17-37). Indeed, as claimed in claim 1, the video information to be displayed on each element of the valve is coded as to be decomposed into two parts: the first part corresponding to a value common to a group of at least two elements (i.e. two pixels) and the second part corresponding to a value specific to each single element (i.e. to each pixel). By simultaneously addressing the at least two elements of a group elements, it is possible to transmit the common value of the video information to be displayed by the elements of the group, the common value being stored by the single second capacitor CS2 of the common drive means, one common drive means being associated to the group of at least two elements.

In contrast to applicants' invention, Chen, which corresponds to the state of the art described in applicants' Specification, discloses a driving circuit of a liquid crystal on silicon (LCOS) cell structure and a method for controlling the driving circuit. The driving circuit of Chen, which comprises a structure comprising 4 transistors (Tad11, Taw11, TBd11 and TBw11) and 2 capacitors (Cs A11 and Cs B11) with an added reset transistor (Tr11) for reducing LC time response and increasing LS (see fig. 6). Figure 4 of Chen illustrates the structure above without the reset transistor (Tr11), i.e. a structure comprising 4 transistors (Tad11, Taw11, TBd11 and TBw11) and 2 capacitors (Cs A11 and Cs B11). The structure illustrated on Fig. 4 is exactly the same as the structure illustrated by Figures 1, 3 and 4 of applicants' specifications, applicants' figures 1, 3 and 4 corresponding to the state of the art. By contrast to applicants' invention, Chen discloses that for each liquid crystal (403), the driving circuit comprises one second

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storage capacitor (CsB11), which is connected to one mirror electrode via one transistor (TBd11). Thus, for a group of two liquid crystals, the driving circuit comprises two second storage capacitor (e.g. CsB11 and CsB21), each one of the second storage capacitor being connected to one mirror electrode (i.e. M11 and M21) via one transistor (TBd11 and TBd21). Therefore, Chen does not disclose or suggest that for one group of at least two liquid crystals (or elements), a drive means common to the at least two liquid crystals comprises one single second capacitor (which is intended to store the common value associated with the video information to be displayed by the at least two liquid crystals) connected to at least two mirror electrodes via at least two fourth transistors. Again, in Chen, for each liquid crystal, the drive means comprises one second capacitor connected to one mirror electrode via one transistor. Thus for a group of at least two liquid crystals, the drive means comprises at least two second connector (CsB11, CsB12, CsB21, CsB22 and so on), each of which being connected to one mirror electrode (respectively M11, M12, M21, M22 and so on) via one transistor (respectively TBd11, TBd12, TBd21, TBd22 and so on). As Chen does not disclose that common drive means comprise one single second capacitor common to at least two liquid crystals, the single second capacitor being intended to store the common value associated with the video information to be displayed by the at least two liquid crystals, Chen does not disclose or suggest that *"the drive means consist in, for each element of the valve, a specific drive means coupled to the mirror electrode (E) of the liquid crystal of said element and intended to store the specific value associated with the video information to be displayed by said element, (and in) for each group of at least two elements of the valve, a common drive means coupled to each element of said group and intended to store said common value associated with the video information to be displayed by said elements of the group and to apply it to the mirror electrode (E) of the liquid crystals of the elements of said group, said common drive means comprising:*

- *a single second storage capacitor (CS2) for storing the common value present on the column line of the valve and intended for said group,*
- *a third switch (T3) for connecting the column line (11) to a first end of*

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*the second storage capacitor (CS2), the other end being connected to a fixed potential,*

*- at least two fourth switches (T4, T4', T4'', T4''') for connecting the first end of the single second storage capacitor to the at least two mirror electrodes (E) of the liquid crystals of the elements of the group".*

Chen corresponds to the state of the art disclosed in applicants' specification that applicants' invention aims at improving by reducing the number of transistors and the number of capacitors, as explained just before.

Applicant respectfully submits that pending independent Claim 1 is thus not rendered obvious under 35 USC §103(a) because all elements of the pending claims are not found in the cited art. Also, Claims 2-5 and 8-9 are also not rendered obvious because they depend on non-obvious independent Claim 1. Applicant respectfully requests reconsideration of the 35 U.S.C. §103(a) rejection of pending Claims 1-5 and 8-9 based on the remarks above.

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**CONCLUSION**

Applicant respectfully submits that the amended pending claims patentably define over the cited art and respectfully requests reconsideration and withdrawal of the 35 U.S.C. §103 rejection of the pending claims. Renewed reconsideration for a Notice of Allowance is respectfully requested.

If there are any additional charges in connection with this requested amendment, the Examiner is authorized to charge Deposit Account No. 07-0832 therefore.

Respectfully submitted,  
Patrick Morvan

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